CLAIMS:

1. A multi-stack optical data storage medium for recording and reading using a focused radiation beam entering through an entrance face of the medium during recording and reading, comprising:

- a first substrate with present on a side thereof:
- a first recording stack named L_0, comprising a recordable type L_0 recording layer, and formed in a first L_0 guide groove, and a first reflective layer present between the L_0 recording layer and the first substrate,
- a second substrate with present on a side thereof:
- a second recording stack named L_1 comprising a recordable type L_1 recording layer, said second recording stack being present at a position closer to the entrance face than the L_0 recording stack and formed in a second L_1 guide groove,
- a transparent spacer layer sandwiched between the recording stacks, said transparent spacer layer having a thickness substantially larger than the depth of focus of the focused radiation beam,

characterized in that the first L_0 guide groove has a depth $G_{L0} < 100$ nm.

2. A multi-stack optical data storage medium according to claim 1, wherein $G_{L0} < 80$ nm and the first L_0 guide groove has a full half maximum width $W_{L0} < 350$ nm.

3. A multi-stack optical data storage medium according to any one of claims 1 or 2, wherein $25 \text{ nm} < G_{L0} < 40$ nm and the first reflective layer comprises a metal and has a thickness > 50 nm.

4. A multi-stack optical data storage medium according to any one of claims 1-3, wherein the recordable type L_0 recording layer comprises a dye and has a thickness between 70 nm and 150 nm measured on the land portion of the guide groove.

5. A multi-stack optical data storage medium according to any one of claims 1-4, wherein a dielectric layer is present at a side of the L_0 recording layer opposite from the side

where the first reflective layer is present.

6. A multi-stack optical data storage medium according to claim 5, wherein the dielectric layer has a thickness in the range of 5 nm – 120 nm.

7. A multi-stack optical data storage medium according to any one of claims 1-4, wherein a second reflective layer comprising a metal is present at a side of the L_0 recording layer opposite from the side where the first reflective layer is present.

8. A multi-stack optical data storage medium according to claim 7 , wherein the second reflective layer has a thickness in the range of 5 nm -15 nm.

9. A multi-stack optical data storage medium according to claim 7 or 8 , wherein the second reflective layer mainly comprises a metal selected from the group of Ag, Au, Cu, Al.

10. A multi-stack optical data storage medium according to any one of claims 1-9, wherein the effective reflection level of the stacks is at least 0.18 at a radiation beam wavelength of approximately 655 nm.

11. Use of an optical data storage medium as claimed in any one of the preceding claims for multi stack recording with a reflectivity level of the first recording stack L_0 as such of at least 0.5 and modulation of recorded marks in the L_0 recording layer of at least 0.6 at a radiation beam wavelength of approximately 655 nm.